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ABSTRACT

There is a need for empirical investigation of the optimal length for drill sentences at various states of second language learning. This paper reports the results of a study that explores the effects of sentence length and grammatical structure on the ability of foreign students to repeat English sentences. It was hypothesized that sentences of the same length but with different syntactic structures would not be equally easy to repeat. The results show that repeatability of sentences depends on the syntactic structure of the sentences, as measured by type of sentence expansion and sentence pattern, as well as on the number of words in the sentence. The results also indicate that as sentences become longer the effect of the structure becomes more pronounced. In constructing drill sentences for foreign language learners, sentence pattern, type of sentence expansion, and sentence length should all be considered of prime importance. (Author)

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Sentence Length, Grammatical Structure, and Repetition of Sentences

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Sentence Length, Grammatical Structure, and Repetition of Sentences

Introduction

In teaching English to speakers of other languages, much time is often spent in repetitive drill. In order to make such drills meaningful, the length of the sentences presented for repetition should be controlled, as should the syntactic structure of the sentences. The optimal length for drill sentences as well as the sentence patterns and types of expansions presented for repetition should vary according to the student's level of proficiency in the language he is learning. At each stage of learning, previously learned material must be integrated into the drills, recombined with new material, and expanded. If this is done, the student may be able to repeat correctly structurally more complex sentences which are needed at the more advanced stages of second-language learning.

The present study explored the relationship between the syntactic structure of English sentences and the difficulty of repeating the sentences when certain formal properties of sentences were controlled.

Procedure

In order to investigate the effect of sentence length and grammatical structure on repeatability of sentences, a test was constructed of 84 sentences which varied in length, sentence pattern, and type of sentence expansion. The sentence structures and expansion types were taken from Harris' (1964) classification of elementary sentence structures and elementary transformations. The vocabulary of the sentences was in the limits of the 3,000 most frequent words in the Thorndike-Lorge (1944) word list.

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The subjects, who were enrolled in courses at Columbia University, fell into three groups: 18 native English speakers; 30 advanced foreign students who were taking courses in Freshman English; and 114 intermediate-level foreign students who were taking non-credit courses in English for Foreign Students.

The test sentences were presented for repetition in a language laboratory. Subjects were asked to repeat the sentences which were presented to them on tape. The voice from the master tape as well as the subject's responses was recorded onto the subject's reel of tape. All students were tested five or six weeks after the semester began.

The 84 sentences presented for repetition consisted of 12 base sentences and 72 expanded sentences. The sentences were varied systematically in three ways: (1) length (5, 8, and 11 words), (2) sentence pattern (NVN, NVPN, and NVNPN), and (3) type of sentence expansion (adjuncts, adjectival clauses, and end adverbial clauses). There were four sentences for each combination of three patterns, three types of expansions, and two lengths (8 and 11 words) plus four sentences for each base pattern of 5 words.

For each subject, the mean percentage of words repeated correctly was computed. A separate score was obtained for each combination of length, grammatical pattern, and type of sentence expansion (21 scores). The effect of sentence length, grammatical structure, which was indexed by the two variables of sentence pattern and type of sentence expansion, and the interaction among these three variables on repeatability was tested by means of an analysis of variance. (The base sentences of 5 words in length were omitted from the analysis of variance because they did not vary in expansion type.) Types of student errors were then tabulated.

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Results

It was found that successful repetition of English sentences seemed to depend upon syntactic structure as well as sentence length. Sentences of the same length varied in the ease with which they were repeated, the ease of repetition depending upon the syntactic structure of the sentences. The extent to which length became a dominant factor in repeatability depended upon the subject's level of proficiency in English. The less proficient the student, the more difficulty he had with longer sentences.

The mean percentages of words correctly repeated for each combination of pattern, type, and two lengths are shown in Table 1. It will be observed that the native speakers correctly repeated more than 95 percent of the words in 8-word sentences and, with three exceptions, more than 95 percent of the words in 11-word sentences. For the advanced foreign students, the scores for 8-word sentences ranged from 82.3 to 99.0 and the scores for 11-word sentences ranged from 42.0 to 95.0. The intermediate students' scores ranged from 61.1 to 91.4 for 8-word sentences and from 28.3 to 78.4 for 11-word sentences.

Given the same pattern and type, the longer sentences were always more difficult to repeat than the corresponding shorter ones. However, for the native speakers, the magnitude of the difference in mean scores was often slight. In comparison, the intermediate foreign student group showed marked differences between the mean percentages of words correctly repeated for 8-word and 11-word sentences.

The results of the analysis of variance indicate that the main effects of group, length, pattern, and type were all significant with large differences among the scores for the three different groups and between the scores for 8- and 11-word sentences.

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Table 1

Mean Percentages of Words Repeated Correctly

for Different Combinations of Variables

Sentence Structure	Native Speakers	Advanced Foreign Students	Intermediate Foreign Students
Pattern NVN			
Adjuncts			
8 Words	99.5	94.5	73.2
11 Words	90.5	73.7	53.7
Adjectival Clauses			
8 Words	99.7	94.0	79.7
11 Words	97.7	90.2	68.5
End Adverbial Clauses			
8 Words	99.8	99.0	91.4
11 Words	99.2	95.0	78.4
Pattern NVPN			
Adjuncts			
8 Words	100.0	92.8	69.7
11 Words	88.9	65.5	40.8
Adjectival Clauses			
8 Words	99.7	90.1	71.5
11 Words	95.7	84.6	58.3
End Adverbial Clauses			
8 Words	99.7	95.5	85.0
11 Words	98.7	90.2	64.9
Pattern NVNPN			
Adjuncts			
8 Words	95.5	82.3	62.9
11 Words	73.5	42.0	28.3
Adjectival Clauses			
8 Words	98.3	91.0	61.1
11 Words	96.3	79.1	41.7
End Adverbial Clauses			
8 Words	99.8	94.8	73.8
11 Words	98.6	87.3	57.5
Number of Subjects	18	30	114

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As can be seen from Table 1, the easiest pattern was NVN and the most difficult was NVNPN. All groups repeated more words correctly in sentences with Pattern NVN and fewer words correctly in sentences with Pattern NVNPN. The easiest type of expansion was by means of end adverbial clauses and the most difficult was by means of adjuncts.

Content analyses were made of the errors found in the repetitions of the native speakers, the advanced foreign students, and a random sample of 30 subjects from the intermediate foreign student group. Errors were classified into six categories: substitutions, omissions, additions, inversions, misplaced words, and unintelligible words. Incomplete repetitions and instances of no repetitions were also counted. For all groups, the largest percentage of errors made in the repetition of 5-word sentences was substitutions although, for the native speakers, the percentage was negligible. Substitutions were also the most numerous error made in the repetition of 8-word sentences. The second most numerous error in the repetition of 8-word sentences was omissions, with the intermediate foreign student group having a higher percentage of omission errors than the other groups.

When 11-word sentences were repeated, omissions were more numerous than substitutions. The percentage of additions was about the same for all groups. As would be expected, the largest percentage of incomplete repetitions and no repetitions occurred when the sentences were 11 words long. For both foreign student groups, the smallest percentage of 11-word sentences was missed when the sentence pattern was NVN. All groups missed the largest percentage of 11-word sentences when the pattern was NVNPN.

For all groups, the fewest errors occurred in sentences expanded by end adverbial clauses and the largest number of errors occurred in sentences expanded by adjuncts. It should be noted, however, that, for the

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intermediate foreign students, the difference between the total percentage of errors made in sentences with adjuncts and in sentences with adjectival clauses was negligible.

The largest number of incomplete repetitions and instances of no repetitions at all occurred in the adjunct expansion. The most frequent omission was that of adjectives in the predicate. Additions occurred most frequently in Pattern NVNPN, with the being the most frequently added word.

The content analyses of the errors support the earlier findings that Pattern NVNPN was the most difficult pattern to repeat correctly and the adjunct expansion was the most difficult type of expansion.

Discussion

The order of difficulty of the patterns is not surprising when considered in terms of the chunking hypothesis advanced by Miller (1956). If the results are interpreted according to the number of chunks, or units of information, that have to be stored, then Pattern NVNPN can be considered as having more chunks than the other two patterns.

Furthermore, the chunking hypothesis can explain the difference between the repetitions of the foreign students and the native speakers on Patterns NVN and NVPN. If a preposition constituted a separate chunk for the foreign students, then Pattern NVPN had more chunks than Pattern NVN, and Pattern NVNPN had the most. One explanation for the increased difficulty in sentence patterns would be the increase in the number of chunks. Another explanation for the greater difficulty that the foreign students had with Pattern NVPN than with Pattern NVN may be simply that the students did not know the meaning of the prepositions in the context of the sentences. That is, the prepositions were difficult lexical items. Considering the difficulty that foreign students have with English prepositions, this supposition is not unfounded.

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The present study has obvious implications for foreign language teaching, in general, and for teaching English to speakers of other languages, in particular, inasmuch as the subjects were learners of English and the materials used were English sentences. The most significant aspect of the study for foreign language teaching lies in the area of preparation of teaching materials.

Given a sequence of grammatical items to be taught, the teacher or materials writer is still confronted with the task of choosing sentences that will exemplify a new pattern as well as incorporate previously taught patterns. The present study has demonstrated the interaction which exists between repetition difficulty due to sentence length and repetition difficulty due to sentence patterns and types of sentence expansions and suggests the need for a more precise determination of the optimal length for sentences of various syntactic structures.

Although the three sentence patterns used in the present study are very common, they were not equally easy to repeat and it would seem, therefore, that they should not be introduced at the same stage of learning. Evidence indicates that the foreign students had proportionately more difficulty repeating sentences with patterns that included a prepositional phrase. In addition, those sentences that did not have determiners were more difficult to repeat correctly. The finding that the preposition difficulty occurred when the preposition was determined by the preceding verb (as in the combination "discuss with") suggests that students may need practice using verb-preposition combinations even though the verbs may already be familiar to the students. Thus, although the verb <u>discuss</u> may have been in the students' active vocabulary, they may not have known the phrase <u>discuss + something + with + someone</u>.

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One reason why sentences with Pattern NVNPN may have been especially difficult is that there were no determiners in the 5-word base sentences. Since a determiner indicates a forthcoming noun, it provides the student with more clues as to the structure of the sentence. It seems likely that adding determiners to Pattern NVNPN would increase repeatability. The materials writer might be advised, therefore, to include determiners when introducing new patterns even though the length of the sentence would increase. For example, a sentence such as "The theaters sent tickets to the directors" or "The theaters sent the tickets to directors" might have been easier than the test sentence, "Theaters sent tickets to directors." It should be noted, however, that the addition of a determiner usually changes the meaning of a sentence.

The present investigation also suggests that sentence length can be effectively controlled by controlling the length of the type of expansion. For example, the results seemed to indicate that the intermediate foreign students in this study could not successfully handle more than one adjunct in a sentence regardless of the sentence pattern. It might be concluded, therefore, that the number of adjuncts should be limited at each stage of learning. (Since the students in this study were classified as intermediate on the basis of an examination which had a substantial correlation of .87 with the Test of English as a Foreign Language (TOEFL), any recommendations for these students would be likely to apply to any students classified as intermediate on the basis of the TOEFL test.) The results also suggest that an adjective in the subject is less likely to be omitted than an adjective in the predicate, but further research is needed to determine whether an adverb would be easier to repeat in medial or in final position.

Although Nickel and Wagner (1968) believe that restrictive adjectival clauses can be introduced at a relatively early stage, the findings of the

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present study indicate that their length should be limited to about three words when the clauses are first introduced to an intermediate foreign student group. The results also suggest that teaching the adjectival clause in a final rather than medial position in the sentence might aid in correct recall. Furthermore, errors using who and which in introducing adjectival clauses were frequent, suggesting that more attention be placed on identifying the antecedent noun as human or nonhuman.

With regard to frequency adverbs, it is interesting that fewer errors were made in repeating the word always than in repeating the word often. Other things being equal, always should, therefore, be the earlier of the two frequency adverbs to be introduced in a set of materials. With regard to conjunctions, it was found that fewer errors were made in repeating the word because than in repeating the word when. Because should, therefore, be the earlier of the two conjunctions used to expand sentences.

Overall, the results of the present investigation suggest that drills be constructed in such a way that difficult items (which should first be practiced in isolation with the pronunciation they will have in the sentences) are incorporated into sentences with relatively easy sentence patterns, such as Pattern NVN, and into sentences with relatively easy types of expansions, such as end adverbial clauses beginning with because. In this way, it may be possible to achieve correct repetition of structurally more complex sentences, which are needed at the more advanced stages of second-language learning. In constructing drill sentences for foreign language learners, sentence pattern, type of sentence expansion, and sentence length should all be considered of primary importance.

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